CHARACTERISTICS OF CLUSTERING PROTOCOLS OF WIRELESS AD HOC NETWORK: A COMPARITIVE ANALYSIS

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ABSTRACT

A need for a self-organising reliable network structure was felt that can be maintained under changing connectivity without the support of a central controller. The classical hidden terminal phenomenon of a wireless communication increases the radio channel transmission conflict because of the widespread disperse of nodes. Scalability is of particular interest to ad hoc network designers and users and is an issue with critical influence on capability and capacity.

Where topologies include large numbers of nodes, routing packets will demand a large percentage of the limited wireless bandwidth and this is exaggerated and exacerbated by the mobility feature often resulting in a high frequency of failure regarding wireless links. Owing to a variety of benefits, clustering is becoming an active branch of routing technology in Wireless ad hoc Networks. Clustering is a key technique used to extend the scalability, reliability and lifetime of ad hoc network by reducing energy consumption.

We analytically study a few distinguishable WSN clustering routing protocols and equated these different approaches according to several significant metrics.

KEYWORDS: Cluster, Cluster Head, Cluster Member, Gateway, Wireless ad hoc Network, Routing Protocols